

*DEVICE FOR AND METHOD OF DRAINING A COOKING LIQUID FROM A FOOD  
COOKER*

CROSS REFERENCE TO RELATED APPLICATIONS

This application is the US national phase of PCT  
5 application PCT/EP2003/011026, filed 6 October 2003, published 29  
April 2004 as WO2004/034861, and claiming the priority of Italian  
patent application MI2002A002212 itself filed 18 October 2002,  
whose entire disclosures are herewith incorporated by reference.

FIELD OF THE INVENTION

10 The present invention refers to a device and method of  
draining a cooking liquid from a food cooker. In particular,  
hereafter reference shall be made to cooking apparatuses like  
fryers. It is, however, clear that the same teachings can  
advantageously be used on similar apparatuses like electrical  
15 pasta cookers, rice cookers, etc.

BACKGROUND OF THE INVENTION

For some time fryers have been present on the market  
equipped with an oil-containing vessel and a basket which can be  
inserted in the vessel in which the food products to be fried are  
20 to be held.

As is known, such fryers after a certain number of  
cooking cycles require the replacement of oil; however, this  
operation is very laborious since the entire fryer must be tipped  
up to pour out the oil from the vessel.

It is clear that such an operation can cause numerous drawbacks, among which we mention the danger of burning for the user and the staining of the resistance heating coils or other electrical parts of the fryer.

5           To avoid these drawbacks devices have been developed which allow the oil to be tipped out without the fryer needing to be raised or tilted. Such devices comprise bendable tubes made from flexible rubber equipped with an end cap. In practice, in a rest position these tubes are bent and housed in suitable seats  
10           formed in the body of the fryer, whereas in work position the tubes are unbent and the cap is taken off so as to drain the oil, all while keeping the fryer in a flat position.

          However, such devices have also presented numerous drawbacks, including the fact that the flexible rubber tubes do  
15           not ensure sufficient stability and safety and it is possible that, during draining of the oil, due to oscillations or vibrations, prompted for example by their own elasticity or by knocks or displacements of the fryer, the oil falls or splashes out of the container in which it is being collected.

20           Moreover, the rubber element, due to the heat and the repeated bending, tends to become damaged through time. The harmful effect of the draining oil, which can seep through the slits of the tube, is clear.

          Moreover, with conventional fryers it is usually very  
25           difficult to control the rate at which the cooking liquid is drained and, moreover, sometimes the cap is removed after the

tube has been removed and rectified, usually causing inconvenient drips.

#### OBJECTS OF THE INVENTION

The object of the present invention is, therefore, that  
5 of providing a device and method of draining a cooking liquid  
from a food cooker that allows the aforementioned technical  
drawbacks of the prior art to be eliminated.

Another object of the invention is to provide a  
discharge device and procedure which are very stable and safe, in  
10 particular during discharge of the cooking liquid.

Yet another object of the invention is to provide a  
draining device which is not subject to damage, due to heat and  
repeated bending, through time.

A further purpose of the invention is to provide a  
15 discharge device and procedure that allow the discharge of liquid  
to be controlled. In this way it is possible to control the  
liquid which is draining from the apparatus for example to take  
it to a certain level in the collection container and/or in the  
vessel of the apparatus, or else to fill the collection container  
20 without making it overflow.

The last but not least object of the invention is to  
provide a draining device and procedure that allow the amount of  
cooking liquid to be discharged to be adjusted and, moreover,  
that allow inconvenient drips to be prevented.

#### SUMMARY OF THE INVENTION

These objects, as well as these and other purposes, according to the present invention, are attained by a device for draining a cooking liquid from a food cooker, characterized in that it comprises a valve intercepting the cooking liquid and an  
5 outside conduit of the apparatus.

The present invention also refers to a method of draining a cooking liquid from a food cooker, characterized in that it consists of rotating a substantially rigid tube, connected to a valve intercepting liquid, from an upward  
10 orientation to a downward orientation, simultaneously and progressively taking valve from a closed position to an open position, so as to allow the discharge of the liquid through the intercepting means and the tube.

#### BRIEF DESCRIPTION OF THE DRAWING

Further characteristics and advantages of the invention shall become clearer from the description of a preferred but not exclusive embodiment of the device and method of draining a cooking liquid from a food cooker according to the invention, illustrated for indicating and not limiting purposes in the  
15 attached drawings, in which:

FIG. 1 shows a perspective view of a cooking apparatus like a fryer equipped with a draining device according to the present invention;

FIG. 2 shows a cross section of the draining device of  
25 FIG. 1 in closed configuration; and

FIG. 3 shows a cross section of the draining device of FIG. 1 in open configuration.

#### SPECIFIC DESCRIPTION

With reference to the quoted figures, an apparatus for cooking food products is shown, wholly indicated with reference numeral 1. The apparatus 1 is a fryer but, in other examples, can be an electric pasta or rice cooker. The apparatus 1 has, connected to a lower portion thereof, a device 2 for draining a cooking liquid for food products. The draining device comprises a valve 3 for intercepting the liquid and an outside conduit 4. The intercepting valve 3 are between the conduit 4 and a vessel 5 of the apparatus 1 containing the cooking liquid.

In a preferred embodiment the intercepting valve can comprise a housing 6 connected to the vessel 5 and defining a seat in which a hollow valve body 7 is connected, mobile between an open position (shown in FIG. 3) and a closed position (shown in FIG. 2). Advantageously, the conduit 4 comprises a substantially rigid tube connected to the valve body 7, a passage 8 of the valve body being aligned with a passage 9 of the tube 4.

In the open position the tube 4 is substantially vertical or tilted upward, and in the closed position the tube 4 is tilted downward.

As shown in the attached figures, the housing 6 is comprised of two parts 6a, 6b connected together with the interposition of a gasket 10, the part 6b having a groove 11 in

which the tube 4 is slidably housed and that limits displacement between two angled end walls 20.

Moreover, the draining device 2 comprises a connecting tube 12 extending between the vessel 5 and the housing 6 of the valve. The tube 12 is tilted downward away from the bowl 5.

The operation of the device for draining a cooking liquid from a food cooker according to the invention is clear from that which has been described and illustrated and, in particular, is substantially the following:

When one wants to drain the cooking liquid , for example the oil of a fryer from the vessel 5, the tube 4 is lowered as indicated by the arrow F1.

The lowering of the tube 4 rotates the valve body 7 in its seat and, therefore, progressively aligns its passage 8 with the passage of the tube 12, allowing the oil to flow out.

Advantageously, if the tube is only partially rotated, without moving the passage 8 of the valve body into perfect alignment with the passage of the tube 12, the flow of oil can be limited.

To take the tube back into its rest position (FIG. 2) it is sufficient to rotate it as indicated by the arrow F2 up to vertical.

Preferably, the angled walls 20 of the groove 11 also constitute end stops for rotation of the tube 4 and define the closed position of FIG. 2 with the tube 4 vertical and the open position of FIG. 3 with the tube 4 tilted downward.

The present invention also refers to a method of draining a cooking liquid such as oil from a food cooker such as a fryer.

The procedure consists of rotating the substantially rigid tube 4 connected to the valve 3 that normally blocks outward flow of the liquid, from an upward orientation to a downward orientation, simultaneously and progressively moving the valve 3 from a closed position to an open position, so as to allow the discharge of the liquid through the intercepting means 3 and the tube 4.

In practice, it has been noted how the device and method of draining a cooking liquid from a food cooker according to the invention is particularly advantageous and particularly safe and reliable.

The device and method of draining a cooking liquid from a food cooker thus conceived are susceptible to numerous modifications and variants, all covered by the inventive concept; moreover, all of the details can be replaced with technically equivalent elements. In practice, the materials used, as well as the sizes, can be whatever according to the requirements and the state of the art.